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| Unit Number and Name: | Unit 6 – Using Mathematical tools for Science | | |
| Unit Code: | M/502/5009 | Credit Value: | 5 |
| QCF Level: | BTEC National | Guided Learning Hours: | 30hrs |
| Assessor: |  | | |

Unit:Using Mathematical tools for Science

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| Assignment Deadlines | | | |
| Assignment Deadline Date: | | Handed out | Due in |
| Assignment Hand in Dates | Assignment 1 - Entrance exam | (Date) |  |
| Assignment 2 – Collecting and recording scientic data | (Date) |  |
| Assignment 3 – Displaying and interpreting scientific data | (Date) |  |

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| Unit Context |
| This unit addresses the need for science workers to learn basic mathematical tools that are essential in the  science industry. The intention is not maths *for* maths but maths *for* science and so there is an emphasis on  integrating the maths to practical scientific work. By studying this unit learners will have the opportunity to  consider a number of important concepts, including:   * how to use the International System of Units (SI) correctly * how to leave an answer to the correct decimal place or significant figure * how to manipulate and use simple algebra correctly * how to measure and calculate experimental errors in experiments * how to display and interpret experimental data. |

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| Learning Outcomes |
| **On completion of this unit a learner should:**  1 Be able to use mathematical tools in science  2 Be able to collect and record scientific data  3 Be able to display and interpret scientific data. |

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| Assessment and Grading Criteria | | |
| To achieve a PASS grade you must show that you are able to: | To achieve a MERIT grade you must show that, in addition to the pass criteria, you are able to: | To achieve a DISTINCTION grade you must show that, in addition to the pass and merit criteria, you are able to: |
| **P1** carry out mathematical  calculations using suitable  mathematical tools  [IE1,2; SM3] | **M1** use standard form to solve  science problems | **D1** use ratios to solve scientific  problems |
| **P2** carry out mathematical  calculations using algebra  [IE1,2; CT2; SM3] | **M2** use mensuration to solve  scientific problems | **D2** use algebra to solve scientific  problems |
| **P3** collect and record scientific  data [IE1,2; SM3] | **M3** describe the process involved  in accurately collecting and  recording scientific data | **D3** compare methods of data  collection |
| **P4** identify errors associated  with collecting data in an  experiment [IE1; SM3] | **M4** calculate any errors  associated with scientific data  collected in an experiment | **D4** explain how errors can be  minimised in data collected in  the experiment |
| **P5** select the appropriate formats  for displaying the scientific  data that has been collected  [IE1; CT5; SM3] | **M5** interpret the trend in the  scientific data collected in an  experiment | **D5** calculate scientific quantities  from linear and non-linear  graphs |
| **P6** interpret scientific data |  |  |